Urologic Surgery

Renal Cell Carcinoma with intra-caval neoplastic extension:
The results of an original surgical technique performed in 7 consecutive patients
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About 15% of patients with a Renal Cell Carcinoma (RCC) are also affected by a neoplastic thrombus of the Inferior Cava Vein (ICV). Improvement of perioperative care's techniques led to a decrease of mortality and morbidity. The oncological advantages arising from an en-bloc excision of the thrombus and of the primary tumor, even in presence of a distant metastases, have been well documented. Nevertheless surgical control of the intra-hepatic ICV remains a major technical topic for surgeons. If possible a satisfactory control of the ICV reduces blood loss and avoids tumour fragmentation possibly determining massive pulmonary embolisms. In the present paper we report our experience in surgical treatment of patients with RCC and caval neoplastic thrombus. From January 1996 through December 1998 40 patients with RCC have been observed at our Institution. All patients underwent radical excision of the tumor consisting of radical nephrectomy (n. 37 pts) or hemi-nephrectomy (2 pts). In seven cases (17.5%) caval extension was present. Infra- (Level I), intra- (Level II) and sovra-hepatic (Level III) involvement of the ICV was present in 3, 3 and 1 patient respectively. A concomitant distant metastases was present in one patient (a 2 cm left-lung lesion radically resected). All patients underwent cavotomy with excision of the thrombus. In case of intra- or sovra-hepatic caval extension (4 pts) an original surgical technique was used to remove the thrombus. The procedure can be described as follows: (1) trans-abdominal radical nephrectomy; (2) isolation of the controlateral renal vein and of the proximal tract of the ICV up to the iliac confluence; (3) section of the falciform and triangular ligaments; (4) execution of the Pringle manoeuvre; (5) section of the Spigelio vein and of all the sovra-hepatic accessory veins; (6) complete overturning of the liver; (7) clamping of controlateral renal vein and of proximal and distal ICV (sovra-hepatic or intra-thoracic); (8) cavotomy and radical thrombus excision; (9) suture of the ICV and prompt declamping of the vascular structures. The patient with Level III caval involvement presented also an atrial thrombus. He therefore underwent atriotomy and thrombus removal with cardioplegia, extracorporeal circulation and iliac-superior cava vein by-pass. Mean time of thrombus removal was 20 minutes. Blood loss consisted of 300 ml (100-500 ml). Intra- and post-operative mortality were absent. Major morbidity occurred in one patient (14.2%) (a case of perforated duodenal ulcer). Minor morbidity occurred in one patient (14.2%). Mean time of postoperative hospital stay was 8 days (5-20 days). After a mean follow-up of 20.5 months (1-40 months) all patients are alive and free of disease. It has been assessed that survival of patients with a RCC is not affected by the presence of a caval thrombus if radically resected. An en-bloc surgical removal is now a possible and safe therapeutic option. Nevertheless an inadequate control of the ICV in presence of an intra- or sovra-hepatic extension determines an increase of blood loss and the potential occurrence of lethal pulmonary embolisms. A complete isolation of the intrahepatic ICV, as described in this paper, is a safe and quick manoeuvre. In our experience its use can allow to achieve a complete control of the ICV with reduction of the blood-loss and radical thrombus excision.

DRUG-INDUCED MR-PYELOGRAPHY: A TECHNIQUE FOR THE STUDY OF OBSTRUCTED AND NON-OBSTRUCTED RENAL COLLECTING SYSTEMS. THREE YEARS OF CLINICAL EXPERIENCE.
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PURPOSE: Drug-induced MR-pyelography is a diagnostic technique for the evaluation of obstructed and non-obstructed renal collecting systems performed after drug-induced distention of the urinary tract. We report our clinical experience in the last three years.
MATERIALS AND METHODS: 10 normal volunteers and 71 patients (43 renal calculi, 3 renal ptosis, 3 urothelial tumors, 2 renal tumors, 2 ureteropelvic junction syndromes, 4 symptomatic cysts, 2 horseshoe kidneys, 9 renal malrotations and 3 ectopic kidneys) underwent drug-induced MR-Pyelography, performed with a 3-D non-breath holding fat-suppressed Turbo SE sequence (TR: 3000msec; TE: 700msec; N.Ex.: 4; ETL: 128; Matrix: 256x256; Acq.Time: 9 min) on coronal planes. These acquisitions were post-processed with a MIP algorithm. In order to obtain the maximum filling of the collecting systems, the diuresis was pharmacologically induced by administering i.v. 250 ml of saline solution within 2-3 minutes and afterward 20 mg i.v. of furosemide (Lasix, Hoechst Italy). Two MR acquisitions were performed: one immediately after the infusion of saline solution and the other 2-3 minutes after the end of the first MR acquisition. The diuretic was administered during the second part of the first MR acquisition. 5 normal volunteers and 65 patients had undergone intravenous urography within 2 months preeceding MRI.
RESULTS AND CONCLUSIONS: We always obtained an excellent evaluation of renal collecting systems; the anatomical definition of the calyceal systems was improved after the administration of the diuretic. The visualization by means of MR-pyelography of the renal collecting system with this technique was considered comparable to that obtained with intravenous urography when available. This MR-Urography technique allowed a morphological study of obstructed and non-obstructed renal collecting system and is suggested for patients with controindications for i.v. administration of contrast agents or non-functioning kidneys.

THE LAPAROSCOPIC TREATMENT OF RENAL PTOSIS WITH A PROLENE NET
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INTRODUCTION
Surgery therapy of renal ptosis is controversial. Often surgery does not resolve the symptoms thus the surgeon never faces this problem willingly. Doubts arise due to invasiveness of the operation in relation to the pathology and the scarsity of results. Retroperitoneal laparoscopy is a relatively simple approach to the solution of this problem. We present a variation of the classical nephropexis.

MATERIALS AND METHODS
It is laparoscopic retroperitoneal operation. A prolene net is anchored between the square loin muscle, the psoas and the renal capsular in such a way to form a hammock onto which the inferior pole rests.
An incision of 2 cm is made under the ribs for access to the retroperitoneal space. Dilation is obtained by filling a finger of a surgical glove (mounted onto a trocar) with 700 cc of water. 2 trocars are positioned on either side of the medial line. The inferior pole of the kidney is isolated. The square loin muscle and the psoas can be seen. The net is fixed inferiourly to the renal capsula. In this manner a hammock is formed around the inferior pole of the kidney.

RESULTS AND CONCLUSIONS
Patient was discharged on the second postoperative day and returned to normal activity within 10 days. An IVP at 6 months showed that the net was well fixed, the kidney is well suspended with normal morphology of the urinary tract without ureteral kinking.

LONG TERM FOLLOW-UP OF AMS 800 ARTIFICIAL URINARY SPHINCTER

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INTRODUCTION. We report our ten years experience on implantation of the artificial urinary sphincter.
MATERIALS AND METHODS. From 1989 to 1997 we implanted the artificial sphincter AMS 800 in 52 patients, 49 men and 3 women with a mean age of 69.5 years. All patients suffered from urinary incontinence caused by a sphincteric damage, always of iatrogenic origin. The patients underwent an IVP, cystourethrography,complete urodynamic examination and a urethrocystoscopy. The incontinence ranging from at least time of 5 months. We implanted a complete prosthesis AMS 800. This model is a silicone hydraulic device that consist of 3 components: a cuff, a pump-control assembly and a pressure-regulating balloon. The cuff is implanted around the bladder neck in the women, instead the cuff site for men is the bulbous urethra. Follow-up ranged from 8 to 118 months.
RESULTS. All patients had an indwelling urethral Foley catheter for 4-11 days postoperatively (mean 5.1). At 2 years after the implant 36 patients achieved a successful outcome in terms of continence status. 32 patients no use pads per day; 4 patients use one pad per day and 3 patients use two-three pads per day; 8 patients were explanted. Following complications occurred: overturning of the pump in the scrotum (n=1); presence of air bubbles inside the pump (n=2); fluid loss (n=4); open of the urethral cuff (n=1) [mechanical malfunctionings]; 5 cases of periprosthetic infection requiring the explants, 1 necrosis of the entire urethra, 1 stenosis of the penile urethra, 2 urethral erosions [surgical complications].
DISCUSSION AND CONCLUSIONS. The AMS 800 artificial urinary sphincter is an efficacious treatment for urinary incontinence. Our experience in 10 years of artificial sphincter confirm the good results in terms of continence status and overall in the quality of life.
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BLADDER RECONSTRUCTION AFTER RADICAL CYSTECTOMY FOR TRANSITIONAL CELL CARCINOMA.

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INTRODUCTION
The purpose of this review is to show our experience in the reconstruction of an orthotopic ileal neobladder according to Hautmann after cistectomy for bladder carcinoma. The surgery, that is the most effective weapon against this pathology, if from a side justify the urologist to make a radical procedure, from the other emphasize the reconstruction moment due to assure to the patient the best life conditions.

METHODS
From May 1989 to May 1998, 25 patient with a mean age of 61 years old with stages pT1-pT3N0M0 (G1-G3) underwent to ileal orthotopic urinary diversion according to Hautmann after bilateral pelvic linfonodes dissection and radical cistectomy. The only variation of Hautmann technique was the use of bowel segment of 45-50 cm instead of 60-80 cm.

RESULTS
The median follow up was 33 months (120-24 months). Two patient died, the others are still disease free. In one case we performed a new operation for the infection of surgical wound; in three cases we have prolonged the ureteral stenting because of the lose of urine through the anastomosis. In one case, as long time complication, a stenosis of the new-neck was resolved by transurethral resection. All the patients had a mucous hypersecretion that disappeared in 6-8 months later. Six patients developed mild metabolic acidosis without any consequence.

DISCUSSION
The high capacity with low pressure of the orthotopic neobladder allows a good continence control and a good quality of life. In our experience this techniques have demonstrated a low incidence of complications.

CONCLUSION
The ileal neobladder represent a valid alternative of any form of cutaneous urinary diversion in selected patients. The Hautmann procedure in our experience is the first choice of urinary diversion after cistectomy.

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A NEW PROCEDURE FOR PENILE BIOPSY.

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INTRODUCTION: The best technique of penile biopsy, for evaluating the albuginea status and the cavernous tissue in pathological condition of the penis as Induratio Penis Plastica, fibrosis and erectile dysfunction, has not yet been described.
There are few publications concerning this matter. We describe a new tool and a new technique
MATERIALS and METHODS: Twelve patients with Peyronie disease were investigated and penis biopsy was performed with a biopsy punch (Acu – Punch, Acuderm inc.).
This is a tool with a hollow boring metallic tube well sharpened.
After local anaesthesia, skin is incised for 3 mm and the cutting edge of the punch is inserted into the plaque, avoiding neurovascolar bundle, and is slowly advanced using a full 360 degree rotation until normal cavernous tissue is reached.
In this way we obtained a core of tissue up to 3-4 mm in length, and 2 mm in diameter, in which was possible to identify the albuginea tunica, the cavernous tissue near the albuginea and the normal cavernous tissue.
RESULTS: Histopathological examination of the cores taken with the biopsy punch was performed.
In all the cases we had a very good specimen in which was possible to demonstrate a variety of histological changes of the tunica albuginea and cavernous tissue, ranging from chronic inflammatory cellular infiltration to complete calcification and ossification tissue.
Was also possible to study the relation between smooth muscle cells and collagen fibres that is considered a prognostic factor for the therapy of erectile dysfunction.
CONCLUSION: Penile biopsy with biopsy punch is a simple technique. The discomfort associated with the procedure is tolerable, there are no complications and each biopsy provides sufficient material for the histological evaluation both of the tunica albuginea and the cavernous tissue.

MODIFIED NESBIT PROCEDURE IN THE TREATMENT OF PEYRONIE'S DISEASE: OUR EXPERIENCE

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Introduction:
Approximately 10% of patients with Peyronie's disease require surgery for penile angulation severe enough to make coitus difficult or impossible. Herein we report on our experience with the modified Nesbit operation performing asymmetrical excisions of ellipses of the tunica albuginea.

Material and Methods:
Since 1980 to 1998, 191 patients with penile deformity due to Peyronie's disease were treated at our university through modified Nesbit operation. Patients were evaluated by accurate history, physical examination, penile auto-photograph, color-Doppler ultrasound, roentgenogram of the penis only in particular cases (important calcification or ossification). In all patients the disease was present for at least 1 year; intercourse was impossible or difficult.

Results:
After 6 months 92% of the patients had normal sexual intercourse. 16% had a residual deformity less than 30 degrees and only 2% of them had a poor outcome due to a residual penile deformity > 30 degrees. 16 complications occurred: hematuria in 4 patients, wound infection in 3, urinary ritention in 2, skin necrosis in 3 and granuloma in 4. 86% of the patients referred a penile shortening < 1,5 cm, 14% had a penile shortening 1,5 to 3 cm while 1 patient complained with a significant penile shortening having impossible penetration.

Conclusion:
In our opinion Nesbit operation is the gold standard surgical technique for Peyronie repair in patients with normal preoperative erectile function. A correct indication, a precise technique and an accurate follow-up are mandatory for best results.

A CASE OF ORCHIEPIDIDYMITIS IN THE TREATMENT OF SUPERFICIAL BLADDER CANCER WITH BCG.

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INTRODUCTION
Intravesical instillation of bacillus Calmette-Guerin (BCG) vaccine has been shown to be an effective treatment of superficial bladder cancer. However, it is not free of side-effects and complications. Orchiepididymitis is a rare complication. It's been demonstrated a recurrence reduction in the superficial bladder cancer with administration of BCG, but long-term therapy increase the risk of side-effects.

CASE REPORT
We present a case of a 74 years old man who showed left testicular tumefaction with a caseous cutaneous fistula. Three years before he had a superficial bladder cancer (multifocal pT1a G1), that subsequently recurred. After the second TURB, patient was treated with intravesical BCG. After ten months, during the maintenance period, appeared testicular tumefaction and the patient underwent orchiectomy. The histological exam showed tuberculous epididymitis.

DISCUSSION
The mechanism of orchiepididymitis with BCG treatment is uncertain. The causes could be a traumatic catheterism or a profound resection of bladder which produces bacillus dissemination. However a lymphatic and intracanalicular diffusion from prostate and seminal vesicles to epididymis is possible.

CONCLUSION
In the use of BCG severe but rare complications may be encountered during intravesical instillations. This case shows the importance to include in the patient's follow-up transrectal ultrasonography of prostate and scrotal every six months for early identification of specific lesions.

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ENDOUROLOGIC RECANALIZATION OF THE URETERO-NEOVESCICAL ANASTOMOSIS IN THE ORTHOTOPIC ILEAL NEOBLADDER.

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INTRODUCTION.
One of the most frequent complications of urinary diversion is stenosis of the urteral-neobladder anastomosis (3-14%). We propose and evaluate our endourological technique in the treatment of the strictures of the uretereal-neobladder anastomosis.

MATERIALS AND METHODS.
11 patients with monolateral stenosis of the ureteral-neobladder anastomosis (5 left, 2 right) underwent a radical cystectomy and an orthotopic ileal neobladder "Padovana" with a Le Duc-Camey ureteral anastomosis (5 months to 2 years before). Routine blood tests, ultrasound, renal scintigraphy, IVP and CT scan were carried out. Follow-up was between 3 and 24 months. With the patients in a prone position, percutaneous puncture of the lower calix is carried out The stricture is by-passed with a stiff wire and once the the wire is rolled up in the neobladder, the patient is placed in litotomy position. The guide wire is recovered on the exterior of the urethra to obtain an easily manoeuvrable wire through the entire urinary tract. A 21 Ch cystoscope is mounted onto the guide wire and brought out of the urethra. The anastomosis is reached and an opening wide enough to introduce a 11.5 Ch ureteroscope into the ureter is made with a cold blade knife. A second guide wire is positioned in order to leave in the neobladder 2 double-J stents which keep the anastomosis open during scarring. The stents are removed after 28 days.

RESULTS.
The results were the following: complete recanalization of the anastomosis in 9 patients. 2 patients had another stricture 3 and 5 months later and underwent a new anastomosis with interposing loop.

CONCLUSIONS.
Although follow-up is short the results are encouraging. We believe that the peculiarity of this technique is the percutaneous kidney-ureteral by-pass. With the guide wire kept taut, the ureteroscope slides smootly forward to force the anastomosis stricture.

ONE–STAGE SURGICAL APPROACH FOR CONSTRUCTING FEMALE GENITALIA IN MALE TRANSSEXUAL: OUR EXPERIENCE

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INTRODUCTION: The ideal surgical procedure to construct female genitalia in a male transsexual should be a one-stage procedure, produce an adeguate vagina for intercourse and have a cosmetic result that approximates the genitalia appearance to the normal female genitalia. We describe our experience with a one-stage procedure.

MATERIALS and METHODS: From 1988 to 1998 twenty eight male to female gender transformation surgeries were done at our university center. We used the technique of Edgerton modified by Marten Perolino first and by ourselves later. The operative technique involves the following procedures: bilateral orchiectomy, penectomy, vaginal, pseudocervical and vulvar plastics. The vagina is created with the inverted vascularized penile skin flap and is placed in a newly perineal cavity formed between the prostate and the anterior wall of the rectum.
The vagina should present a depth (8-10 cm) and width (two finger) adeguate for intercourse.
The glans, with preservation of penile neurovascular bundle, remains joined with the inverted skin tube and simulates the cervix. It preserves the somatic and tactile sensation.

RESULTS:.The patients have been under follow up for 6 to 78 months postoperatively. Of 28 treated patients, satisfactory anatomic and functional results were achieved in 24.Six months after the operation 85% had normal intercourse and most of them had the sensation of orgasm.
Complications involved three moderate vaginal stenoses, and four meatal stenoses successfully treated by dilatation.
There was in only 1 case a complete necrosis of the penile skin flap of the new vagina in which we have performed a sigmoid vaginoplasty

CONCLUSION: This technique has given good functional and cosmetic results in 90% of patients. The follow up is long enough to make a long term claim of success, Therefore this one-stage procedure affords the patient the possibility of satisfactory outcomes in the gender reassignment surgery.

URETHRAL DIVERTICULA IN FEMALE: SURGICAL APPROACH

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INTRODUCTION
The diverticulum of the urethra is a saccular dilatation covered by malpighian epithelium. It devlopes in the periuretheral tissue and communicates with urethral lumen trough on orifice of variable diameter. The impact of this disease in literature ranges between 1.85 % and 4.7 % of women, whit a multiple location in 3-13 % of cases.
The authors present their experience with this uncommon pathology of female's urethra, giving a description of diagnostic and surgical approach.

MATERIALS AND METHODS
Between 1981-1997 34 patients aged between 20-51years were observed. They had had 0-3 pregnancies; 3 women were menopaused. 28 patients were symptomatic, complaing irritating troubles like diurnal and nocturnal frequency and urgency; 18 patients were also affected by vulvar pain, 2 by recurrent high temperature; 5 by mild dispareunia. All patients performed an Intra-venous pielography (I.V.P.), but only two case were positive. However the cistourethrography (C.U.G) allowed us to show the diverticular sack in 30 patients. The 4 women with negative I.V.P. and C.U.G. performed a C.U.G. with positive pressure, that was always diriment. All patients were treated with a vaginal diverticulectomy. At 1 yerar folllow-up all patients were evaluated with objective urogynecological exame, urocolture, uroflussimetry, and C.U.G., came out free from relapse.

DISCUSSIONS AND CONCLUSIONS
Vaginal diverticulectomy presents a low rate of relapse and post-operative complications. We advise this kind of surgery also in asinptomatic patients, because of the significant incidence od duverticular complications (lithiasis, phlogosis, sthenosis, tumours).

NEOADJUVANT THERAPY FOR CLINCALLY LOCALIZED PROSTATE CANCER: OUR EXPERIENCE.

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Pathological review following radical prostatectomy indicates that many tumors extend beyond the capsule to the surgical margin.
The incidence of positive margins varies from 10% to 60% depending on a varietyof preoperative factors such as Gleason score, PSA level, number of positive biopsies, tumours location and whether it is adjacent to nerves.
The method of specimen processing can also influence of positive margins. Sectioning at 2-3 mm. Intervals is more likely to reveal a positive margin than if fewer sections per gland are examined.
A more over recent report from the University of Maimi (Mark S. Soloway) incated that there was a rise in PSA at a mean of 24 months post-surgery in 34% of men with tumours at the margin, compared to 7% of man with a negative margin.
For that, the use of treatment such us androgen deprivation for a short period of time (usually 3-6 months) before radical prostatectomy has been advocated by an increasing number of Urologists without clear and definitive proof of its advantage.
In our series, the effect of androgen deprivation was a decrease in the size of neoplastic gland and an increase in the stroma.
Several months of androgen deprivation can lead to periprostatic fibrosis.
Infact we report that more of the pre-treated patients were in the "more difficult" category and that seminal vesicle adherence was more likely.
There was no difference in blood loss, operating time or complications between the two group.

In conclusion, we think that is reasonable to pre-treat patients who are patients who are at high risk for positive margins: patients with cT2b prostate cancer, a PSA level of > 10-20 ng./ml, and those with a high Gleason score.

EPIPIDYMIS-SPARING ORCHIECTOMY WITH TESTICULAR RECONSTRUCTION FOR PROSTATE CANCER.

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INTRODUCTION

The mainstay of treatment of advanced prostate cancer is the androgen deprivation. Orchiectomy produces an immediate and prolonged reduction of testosterone in patients with advanced prostate cancer, but it is a mutilating procedure psychologically unacceptable. We propose an extra-epididymal castration with cosmetic reconstruction of the testis using Spongostan®, a collagen gel matrix derived from pigskin.

METHODS

The epipidymis-sparing orchiectomy was performed in 30 testes of 15 patients with advanced prostate cancer, 66-83 years old (mean 74). Under local anesthesia with 4 cc of 2% ropivacaine for each spermatic cord and two cc in the site of skin incision, a single small middle anterior scrotal incision was made to accessing to each scrotal compartment. After the subepididymal orchiectomy was performed a graft of Spongostan® with the same volume of the testicle was covered with tunica vaginalis with 3-0 absorbable sutures. The same procedure was performed on the contralateral side. The skin closure was done without drains.

RESULTS

The operating time was 40-55 (mean 44) minutes. The only complication was a very mild scrotal edema that disappeared after 5-7 days. After 3-9 months (mean 6) the mean testicle volume was 20 (range 10-30) ml with a sonographic aspect similar to testicular tissue. All the patients agreed the cosmetic aspect of the scrotum.

DISCUSSION AND CONCLUSIONS

Surgical castration gives results equivalent to estrogens, without the disadvantages of cardiovascular complications. The LHRH analogues provoke a long term serum castrate testosterone levels, but they have a very high price. The artificial testicular implant has some problems and a high cost. Epipidymis-sparing orchiectomy and testicular reconstruction with Spongostan® is a simple, safe, economic and psychologically acceptable procedure.

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RETROGRADE LASER ENDOPIELOTOMY IN URETERAL PELVIC JUNCTION (UPJ) STENOSIS; 1 YEAR FOLLOW-UP

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INTRODUCTION

Retrograde endopielotomy is a low invasive technique in the treatment of the ureteral pelvic junction stenosis which allows a quick recovery of the patient. Among the various techniques (Acucise, cold blade, laser), we used the latter in order to evaluate the results of laser fiber in retrograde endopielotomy.

MATERIALS AND METHODS

From June 1996 to November 1997, fifteen patients with UPJ stenosis underwent retrograde laser endopielotomy; of these patients, 9 were primary UPJ stenosis and 6 secondary. All patients had a preoperative work-up which consisted of routine blood tests, renal scintigraphy with wash out test and an intra venous pyelography (IVP). Before the operation a 6 Fr. percutaneous nephrostomy was positioned. We used a Nd:YAG laser and the fiber used had a shapire hooked tip. The average energy delivered for each treatment was 9670 Joule (range 6340-12570) and mean operative time was 29 mins. After the operation a double "J" was positioned and removed after 4 weeks while the nephrostomy was removed on the first postoperative day. No complications occurred and all patients were discharged on second postoperative day. Follow-up at 3, 6 and 12 months consisted in routine blood tests, renal scintigraphy with wash out test and IVP.

RESULTS

At mean follow-up of 7 months (range 2-12) 7 patients (45 %) presented with a UPJ stenosis and underwent open pyeloplasty while the remaining patients had satisfyng results according to IVP and renal scintigraphy.

CONCLUSIONS

Despite the reduced invasiveness and the immediate recovery of the patients together with a quick return to a norml activity, the results were definitely negative as can be seen by the high percentage of recurrences (45 %). This maybe is due to the excessive heat given off by the laser fiber or maybe to the too close contact of the laser fiber with the tissues which, even if the results in terms of accuracy and size of incision are excellent, probably result in an exaggerated scarring process.

Vascular Surgery

Long-term results of extensible ePTFE graft for treatement of aorto-iliac occlusive disease.

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In 1991 a new type of ePTFE longitudinally extensible (Gore-Tex Stretch®) was introduced into clinical practice. Bifurcated graft has been employed for aorto-iliac or femoral reconstructions for atherosclerotic disease at our Institution. The aim of this study is to evaluate the operative performance of bifurcated ePTFE Stretch® grafts and long-term outcome.

Between October 1991 and December 1998, 242 patients (209 men, 33 women, mean age 65 years, range 52-81,) underwent elective aorto-iliac or aorto-femoral procedure employing a bifurcated extensible ePTFE graft (Gore-Tex Strecth®). Preoperatively duplex Doppler and arteriography were performed in all cases. Endarterectomy of the aorta was required in 41 (17%) cases, while the femoral arteries were endarterectomised in 63 (26,2%) cases. Prior to discharge all the patients underwent duplex-Doppler scans which was repeated after 1,3,6 months and on a yearly basis thereafter.

Perioperative mortality was limited to one (0,4%) cases, died of a complicated acute myocardial infarction. Perioperative morbidity was 10,3% including cardiac, cerebral, respiratory complications and acute renal insufficienty. Bleeding required revision of the hemostasis within the first 24 hours were recorded in three patients. The mean follow up was of 30 months (range 1-95). Primary patency was 96,2%. Graft related morbidity included 3 (1,2%) cases of immediate thrombosis of the grafts and 1 (0,4%) case of single limb thrombosis of the graft and 5 (2%) cases of complete occlusion of the bifurcated graft at one year after operation. Patency was restored by means of thrombolysis in two (0,8%) cases and of surgical thrombectomy in 7 cases. In two cases (1 bilateral) stenosis of the distal anastomosis was detected at 7 and 10 months and treated by PTA. Secondary patency was 100%. A graft infection was diagnosed in 3 (1,2%) cases treated with graft explantation and axillo-femoral reconstruction. One inguinal infection with no proximal involvement of the graft was treated locally using homograft. In four additional cases (1,6%) an inguinal pseudoaneurysm of femoral anastomosis were detected at follow up and treated surgically. No periprosthesic collection or dilatation of the graft were shown at the ultrasonographic follow-up.

In conclusion our experience shows that ePTFE Stretch® is indeed suitable for aorto-iliac and femoral reconstruction with good handling and suturing characteristics and its performance may contribute in reducing the incidence of graft related complications.

Reference:

Chiesa R, Melissano G, Castellano R et al. A new ePTFE Strecth graft for aorto-iliac reconstructions: surgical evaluation and one year follow-up with magnetic resonance imaging. J Cardiovasc Surg 1995;36:135-141.

GUIDELINES IN THE MANAGEMENT OF VENOUS MALFORMATIONS

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INTRODUCTION Venous malformations (VMs) represent the most common vascular malformations: in our experience (1993-98) 921 of 2000 patients affected by vascular anomalies presented a VM (46%).

OBJECTIVE In this study we effected a retrospective analysis of a consecutive serie of 921 patients with VMs that underwent to diagnostic evaluation and treatment. Aim of the analysis was to establish new diagnostic and therapeutic guidelines.

PATIENTS AND METHODS We observed 921 patients affected by VMs. 482 was female and 439 males, with a mean age of 21 years (range 2-58). All patients were submitted to a diagnostic protocol consisting of the following instrumental examinations: bone x-ray, duplex ultrasound, computerized tomography (CT) or magnetic resonance (MR), phlebography (performed in ascending, descending and direct phase).
Treatment was carried out in 783 of 921 patients observed (85%). The therapeutic strategy was complied with the different anatomic and haemodinamic alterations showed by the instrumental investigations.
Follow-up (mean 48 months, range 1-70) was performed by clinical and instrumental examinations at 1st, 3rd, 6th month after treatment and every 6 months thereafter.

RESULTS The combination of non-invasive and invasive instrumental exams allowed us to obtain in each patient a complete evaluation of the venous anomalies.
The score of anatomic localizations showed a high prevalence of peripheral forms, that was observed in 507 patients (55%). The cranio-facial forms were 276 (30%). VMs of the trunk and genitals were 138 (15%).
The instrumental findings allowed us to subdivide VMs into simple and complex forms.
Simple forms are constituted by abnormally expanded thin-wall veins (lacunar veins), localized in different tissues: subcutaneous, intramuscular, intraarticular.
Complex forms are constituted by the combination of various alterations of the venous system of a limb: lacunar veins, aplasia or hypoplasia of the superficial and/or deep veins, congenital venous valve incompetence, presence of embryonary veins.
A marginal vein was observed in 32 patients with VMs involving lower limbs. The extreme variability of the marginal vein outflow conduced to our classification: superficial femoral vein, deep femoral vein, common femoral vein, external iliac vein, hypogastric vein, inferior gluteal vein, common iliac vein, multiple confluences.
In simple VMs the treatment of choice was percutaneous sclerotherapy by the means of a direct phlebography. In complex VMs sclerotherapy often supported various surgical procedures such as excision of lacunar veins, removal of marginal vein, external banding valvuloplasty, debridement of fibromuscular bands inducing deep veins hypoplasia.
We totally performed a surgical therapy in 360 patients (46%), percoutaneous sclerotherapy in 219 (28%), a combined therapy in 204 (26%).
Early results were good in all patients obtaining complete or partial regression of VMs, resolution or improvement of clinical signs (pain, edema, dermoipodermitis), abolition of reflux at instrumental assessment.
Late results were good in 705 of 783 patients treated for VMs (90%), poor in 78 patients (10%). Complex and extensive VMs required multiple treatments.

CONCLUSIONS We conclude that the choise of a suitable therapeutic strategy in the management of VMs strictly depends in each patient on the findings of the instrumental investigations. Therefore, in order to obtain good late results, it's necessary to apply a rigorous diagnostic protocol including duplex sonography, phlebography, CT or MR.

BIOLOGICAL MATERIAL FOR INFRAPOPLITEAL BY-PASS: ADVANTAGES, LIMITS AND RESULTS.

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Nowadays, in western countries, critical lower limb ischemia records an incidence of 0.5 - 1%. The current tendency is for the conservative treatment of this affection with percutaneous transluminal angioplasty (PTA) for 20% of the cases, the radical treatment through primary amputation for another 20% and once more for conservative treatment with immediate arterial revascularization for the remaining 60% of the patients. In the last years anatomic limits of revascolarization have extended in a distal way with the opportunity of reaching dorsal pedal arteries, with long-term patency and limb preservation rates between 60 and 90%. Thanks to the autologous vein we are certainly ready to reach the first-rate results mentioned above. We took into consideration the patients who underwent a distal revascularization operation due to critical ischemia in our Surgical Department from January 1988 to December 1997, aiming at defining the real cost-benefit ratio of these operations. We carried out 167 infrapopliteal revascularizations in 158 patients (aged 37 to 89), 110 males and 48 females. We carried out "in situ" or "reversed" autologous vein by-pass. Proximal anastomoses level was determinated according to angiography. Distal anastomoses were carried out after exploration of the arterial segment considered fit by angiography, as well as after the intraoperative survey of real caliber and run-off. Distal anastomoses were carried out in 33 cases (19.8%) with supramalleolar posterior tibial artery, in 38 cases (22.8%) with tibiofibular truncus, in 27 cases (16%) with pedal artery, in 23 cases (13.8%) with inframalleolar posterior tibial artery, in 11 cases (6.6%) with anterior tibial artery and in 13 cases (7.8%) with peroneal artery. Surgical mortality was 1.8%. Early by-pass trombotic obstruction was recorded in 11.9% of the cases. After 1, 2 and 4 years overall graft primary patency has been 70, 56 and 51%. In the fourth year limb preservation overall rate has been 66%.

Factors influencing immediate patency of femorodistal bypass (series of 175 bypass).

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The success rate of femoropopliteal bypass depends on adequate presurgical and perisurgical assessment, based on both clinical and instrumental investigations. We have assessed the incidence of immediate complications and correlated factors, by means of a retrospective analysis of 175 femorodistal bypass operations carried out at the Department of Vascular Surgery of the University of Pavia Policlinico "San Matteo" I.R.C.C.S. in 160 patients: 142 (88%) males and 18 (12%) females with a mean age of 64.7 years (18-86).84 (48%) immediate complications were observed: 37 (21%) thromboses, 11 (6.2%) infections, 6 (3.4%) hemorrhages, 18 (10.2%) hematomas and 12 (16%) arteriovenous fistulas. In the 37 cases of thrombosis patency was 56% and the limb had been saved in 76%.). Out of the 11 (6%) infections, 8 (73%) involved the wound and 3 (27%) the prosthesis. The most frequently isolated pathogens were: Pseudomonas and coagulase-negative Staphylococcus aureus. Patency was 73% and the limb had been saved in all cases (100%). This retrospective study shows that the factors that influence immediate patency of femorodistal bypass are: The risk factors with the most significant correlation were: smoking (24% Vs 15% p 0.25), heart disease (27% Vs 18% p 0.10), previous homolateral vascular surgery (29% Vs 19% p 0.25), steno-obstructive disease as compared to aneurism (24% Vs 13% p 0.10), usage of non autologous material as compared to autologous material (24% Vs 18% p 0.10). The factors that were significantly correlated for infections are: were: arterial hypertension (9.5% Vs 3.2% p 0.10) and diabetes (13% Vs 5% p 0.10). These patients at risk require more intensive perioperative monitoring and antibiotic prophylaxis.

VENOUS ULCER AND DEEP VENOUS RECONSTRUCTIVE SURGERY: ROLE OF EXTERNAL BANDING VALVULOPLASTY (EBV).

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Venous ulcer assumes an important social meaning, considering that it occurs in 1% of population, making financial resources difficult and uncertain. The widespread diffusion of noninvasive diagnostic procedures, like duplex scanning, makes identify correctly haemodynamics patterns of venous reflux, in order to permit an individual surgical therapeutic approach. In most cases, deep venous incontinence is advocated in combination with superficial and perforating vein insufficiency. Deep venous incompetence may be associated with primary deep venous insufficiency (PDVI), congenital anomalies (valvular aplasia) or postphlebitic syndrome. The 3 conditions give rise to a deep venous hypertension that evolves in a leg ulcer. In the lattter two pathologies the valves are absent or they are destroyed by a previous thrombotic event. In PDVI the valves are present and functional, but they are also stretched or prolapsed, in relation to a primary weakness of the connective tissue of the valvular bulb. Therefore, in the PDVI, it is possible to perform a valvular reconstructive surgery. One of the surgical options, avaiable today, is rappresented by external banding valvuloplasty (EBV) wich has its rational in the results of intra-operative Milking manoeuvre. Infact this thecnique can be used in the first stage of PDVI, when venospasm, induced by surgical manipulation, gains a new competence to a previous refluxive valve. In this case, the banding of the valvular anulus with a prosthetic sleeve has the meaning to fit the valve in this state of restored competence. Our personal experience consists of 13 external banding valvuloplasties performed in patients affected by venous recalcitrant ulcer and 3rd -4th degree reflux, according to Kistner classification. The operated valve was the uppermost of superficial femoral vein (SFV), always present just below profunda femoris vein confluence. The operation was associated with: perforating vein disconnection and multiple stab flebectomies in 4 cases; stripping of long saphenous vein in 4 cases; EBV of long saphenous vein in 1 case; high ligation of short saphenous vein in 1 case; cutaneous grafts in 3 cases. At 30 month average follow-up we observed complete healing in 6 cases; an improvement in 5 cases; no change in 2 cases. These encouraging resolts are confirmed by the most important series pubblished in 1996 by Raju, who reports 72 EBV of SFV with 83% of clinical success. EBV of SFV doesn't request anticoagulant drugs during the perioperative period. It is a short-time demanding and efficient therapy, with long lasting effects, suitable for multiple reconstructions, even for small veins.

Aorto - iliac aneurysm associated to bilateral renal ectopia and duplication of inferior vena cava.

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INTRODUCTION: Abdominal aortic surgery for aneurysmal disease is now a standardized technique with a low morbidity and mortality rate (< 5 %). Abdominal aortic aneurysm (AAA) associated to unilateral pelvic renal ectopia is extremely rare. We present a case of successful AAA and bilateral iliac aneurysms reconstruction in a patient with bilateral renal ectopia (right iliac and left pelvic kidney) and duplication of inferior vena cava (IVC). We have not found, in literature, any case of pelvic or iliac kidneys associated to AAA and duplication of IVC.

METHODS: A 69-year-old man was admitted with the diagnosis of aorto-iliac aneurysm. CT scan showed an AAA beginning 4 cm below the superior mesenteric artery, measuring 5 cm, extended into the right common iliac artery aneurysm (diam. 4,3 cm); the right external iliac artery was stenotic; the left common iliac artery was slightly dilated and obstructed. The right kidney layed on the right psoas muscle; the left kidney was entirely into the pelvis. Transfemoral aortography showed two renal arteries arising from a common stenotic trunk at the aortic bifurcation. Flebography showed: the right renal vein in front and around to the right common iliac aneurysm, entering in right common iliac vein; the left renal vein continuing in the left inferior vena cava that passed anterior to the aorta and joined to right vena cava below the superior mesenteric artery. We operated on the patient with a transperitoneal approach; it was proximally anastomosed a Dacron(bifurcation graft (16 x 8 mm) to the aorta . The trunk of renal arteries was sutured directly to the left limb of the graft. The right limb of the graft was anastomosed to the right hypogastric artery. To revascularizate lower extremities without further renal ischemic time, we anastomosed two 8 mm. Dacron(graft from the right limb of the aortic bifurcated graft to common femoral arteries. Total ischemic renal time was 35 minutes and we not use any method of renal preservation. The post operative course was uneventfull.

DISCUSSION AND CONCLUSIONS: The anomalies of kidneys when associated to AAA cause some technical problems: in the treatment of AAA and anomalous renal vessels, the kidney in an anomalous position can be an obstacle to approach the aneurysm; the injury of an anomalous and unknown IVC can cause severe bleeding; aortic and renal arteries reconstruction can cause a prolonged renal ischemia. A careful preoperative study in patients with AAA is essential. It's fundamental to recognize patients with genitourinary and venous anomalies for a correct surgical management.

Vascular involvement on thyroid cancer surgery

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Microscopic vascular invasion by thyroid cancer is known. Venous involvement is uncommon, arterial involvement is extremely rare and limited to the adventitia. The angioinvasion of cervical veins with extension to great vessels of the chest is typical of the terminal stages of the cancer disease, and it is a recognized cause of morbidity and death.

The biological behaviour of the differentiated carcinomas of the thyroid justifies extended surgical procedures since vascular invasion does not represent an absolute controindication.

Materials and methods

The Authors have evaluated the indications, the technique and the therapeutical effectiveness of radical surgical resection extended to the major veins and arteries of the neck and the chest, in case of their invasion by a differentiated carcinoma of the thyroid gland. From November 1987 to December 1998, 117 patients with primary thyroid cancer underwent surgery in the Department of Endocrine Surgery of the Catholic University in Rome.

Results

In 13 cases it was showed vascular invasion. Internal jugular vein with the proximal tract involvement in 3 cases. Internal jugular vein tumor thrombosis in 2 cases. Involvement of the common carotid artery in 7 cases. Extension of the thyroid malignancy to innominate vein and superior vena cava in 1 case.

Conclusions

Total thyroidectomy with resection of the angioinvasive extension plus post-operative radioactive iodine therapy have controlled these malignancy and all patients (with the exception of 1 dead for AMI) are alive and without signs of recurrecies at last follow-up.

In conclusion angioinvasion in differentiated thyroid cancer does not represent a controindication to surgery and extensive and aggressive operative procedures are giustified.

The role of Intravascular Ultrasound in morphological and dimensional assessment of abdominal aortic aneurysms: implications for endovascular repair

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Intravascular Ultrasound (IVUS) technology represents an adjunctive tool for imaging during endovascular procedures for abdominal aortic aneurysms (AAAs) exclusion. IVUS is especially useful in vessels diameter and length measurement, in intraluminal details evaluation and in precise location of side-branches origin. We perform IVUS study routinely during endovascular repair of AAAs and we reviewed our cases to understand which additional information is provided, compared to angiographic and CT evaluation.

From September 1997, 18 patients (17 males, 1 female) underwent endovascular repair for AAA under general anesthesia. Patients' mean age was 72 (range 68-86). We implanted Medtronic AneuRx bifurcated endograft in 17 cases and World Medical Talent tube endograft in 1 case. IVUS control was carried out in all cases using 6F 12,5MHz mechanical rotating catheters (Sonicath Ultra 6, Boston Scientific), before and after endograft deployment. Mean additional operative time for IVUS examination was 13 minutes, with no related complications in any case.

IVUS evaluation provided critical information about diameter of the aneurysm's proximal neck and about length of aorto-iliac system (starting from the lower renal artery down to the aortic bifurcation or the higher iliac bifurcation). Compared to conventional preoperative CT-scans, IVUS proximal neck mean diameter was 20.5 mm *vs* 21.6 mm (mean difference 1.1 mm, $p=0.03$) while IVUS mean aorto-iliac system length was 160 mm *vs* 122.2 mm (mean difference 37.8 mm, $p<0.00005$). Discrepancy between IVUS and CT measurements of aortic diameter is probably due to CT scanning plane, which generally is not perpendicular to the vessel main axis, overestimating the real vessel diameter. The difference in aorto-iliac length assessment reflects the problem that with tortuous vessels several millimeters of the artery can be comprised in the same CT scan, underestimating the vessel length.

IVUS was also useful in precisely locating the origin of renal and hypogastric arteries, which can be shadowed on angiography due to the overlapping of the aortic or iliac images.

At the end of graft deployment, the technique allowed to assess the result of the procedure, confirming the good expansion of the endograft. In 2 cases with a normal completion angiography, IVUS control determined an additional intervention (in one case balloon angioplasty for graft limb stenosis, and in the other case stent deployment for extensive external iliac dissection). It is of interest that in one patient with chronic renal failure we could carry out the entire procedure only with the aid of fluoroscopy and IVUS, limiting the use of contrast medium to 35 ml for one post-deployment angiogram.

According to our experience, IVUS control seems to provide additional information during endovascular repair of AAAs, where it is critical to get precise measurements and effective evaluation of the result of the procedure. Moreover, the method could be a good option to limit the use of contrast medium in patients with high serum creatinine levels.

The endovascular treatment of abdominal aortic aneurysm: our experience.

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Purpose: Aortic endografting for the treatment of infrarenal abdominal aortic aneurysms (AAA) has evolved quickly in a few years, although most of the clinical trials are not yet conclused. The aim of this study was to evaluate feasibility and present early results of treatment of infrarenal AAA with endoluminal stent-graft.

Methods: In 22 male patients from October '94 were transfemoral implanted 21 straight or bifurcated stent-grafts to treat infrarenal AAA involving in 8 cases the bifurcation and in 4 cases the common iliac arteries. All patients were treated with Vanguard device except one in whom it was used a custom made Talent endograft because of the wide of the common iliac arteries (>18 mm).The follow-up ranged from 1 month to 4 years with a mean value of 8 months. The patients has been evaluated with the following examinations : duplex scanning, contrast-enhanced helical CT angiography or gadolinium-enhanced MR angiography.

Results: The implantation was technically successful in all but two patients of the 22 (91%). In one case it wasn't possible the progression of the delivery sistem through the iliac axis, this patient had a marked iliac artery tortuosity and calcification ; in the second case there was a conversion (4.5%) into open surgical procedure because of an abdominal hemorrhagic complication. Two patients died in the perioperative period (mortality rate 9%) : one multiorgan failure and one myocardial infarction respectively in the eighth and in the third postoperative day. There were three early endoleaks (13.5%) that spontaneously sealed and one late endoleak (4.5%) at four years. In this patient the diameter of the endovascularly excluded AAA showed no change during all the follow-up period. Two patients experienced the occlusion of the left limb of the stent-graft (9%): one immediately after the procedure and another one at 6 month.The first case required surgical treatment (femorofemoral by-pass) due to the acute limb ischemia instead of the second case that didn't need any surgical procedure. Five inguinal complications (22%) were observed (4 hematomas, 1 lymphatic leakage) only one of which required surgical repair.

Conclusion: Exclusion of AAA from circulation is feasible, and clinically effective. We belive tha it will change the management of the AAA. Nevertheless, as the high complications rate shows in this series, it is a technically demanding procedure , requiring both surgical techniques and catheter skills.

Dissecting bilateral extracranial carotid aneurysms: a technical note on surgical treatment.

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Introduction: The frequency of aneurysms of the extracranial carotid artery ranges from 0.4 to 4% of localizations of the peripheral arteries.Bilaterality is exceptional. **Case report**: A 48-year old male was hospitalized 2 months after a transitory ischemic attack and a stroke.. Surgical treatment was decided upon after the confirmation of the diagnosis of bilateral carotid aneurysm and also considering the seriousness of the patient's general conditions. Surgery was performed in 2 stages at an interval of 1 month. After extensive dissection of the Internal Carotid Artery and Common Carotid Artery (CCA) , an internal to common carotid trasposition was carried out. A saphenous graft was then anastomosed in a T-T fashion to the External Carotid Artery and in a T-L fashion to the CCA, thus avoiding interruption of flow to the brain. Post-surgery follow-up was uneventful for both operations. The patient was discharged on the fifth post-operative day after each operation and is still well to date (19 months later). **Discussion**: Dissection is the aetiologic factor in about 9% of the cases. Indication for surgery remains exeptional. At the moment the resectioning of the aneurysmatic wall with restoration of vascular continuity, represent the treatment of choice.In the presence of a bilateral lesion, as in our case, the binding of both external carotids appeared hazardous and a surgical reconstruction as close as possible to the normal state was mandatory.

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Modified Taylor patch made of Tromboendoarterectomized segment of obliterated superficial femoral artery in femoropopliteal bypass graft.

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***Introduction**:* The incidence of acute and sub-acute graft thrombosis is increasing due to the larger number of graft implantation, and to the improvements of vascular surgery techniques that made possible more vascular procedures. Since recurrent ischemia is the main problem of vascular surgery, is obvious that Technical considerations are of the utmost importance, and improvements that may achieve better results are required. The application of a Taylor patch seems to improve late patency but the required segment of vein may be non available. The Authors suggest the use of a Tromboendoarterectomized segment of the obliterated superficial femoral artery as patch material.

***Methods**:* Authors refer on 21 cases of femoropopliteal graft bypass with distal Taylor patch performed from 1994-6 in group of 161 femorodistal revascularization out of a global of 4122 vascular procedure. In 7 cases bypass were performed with distal anasthomoses above knee, in the other 14 cases distal anasthomosis were below the knee. In the first group of patients the choice of prosthetic graft was made in order to preserve the saphena vein for progression of atherosclerosis of the distal vascular tree. In the other group of patients saphena vein was unavailable.

***Results**:* The operative mortality rate was zero, and no cases of acute post operative occlusion was recorded in both groups. A late occlusion was recorded in 1 case of above knee femoropopliteal bypass after 8 months from surgery. In the group of below knee bypass 2 cases of occlusion were recorded (the first after 10 months from surgery and the second after 18 months).

***Conclusion**:* The modified Taylor patch seems to results a valid alternative to saphena vein patch in case of critical distal anastomosis, able to improve late patency (especially in the BK group) and to preserve veins for progression of atherosclerosis.

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Low Molecular Weight Heparin after Peripheral Prosthesic Vascular Surgery

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Introduction. The main advantages of low-molecular-weight heparin (LMWH) are its higher bioavailability and longer plasma half-life after subcutaneous injection, compared with unfractionated heparin. Thus, postoperative prophylaxis of early occlusion of vascular grafts and of deep vein thrombosis (DVT) should be possible with one injection a day, whereas unfractionated heparin must be given two or three times a day. The relative efficacy and safety of LMWH and unfractionated heparin both in the prevention of early post-operative prosthetic occlusion and post-operative DVT were compared in patients undergoing peripheral vascular surgery.

Methods. Fourty patients were enrolled in a prospective double-blind, randomized trial. Among the 38 patients completing the trial, twenty received one subcutaneous injection of 3.000 anti-Xa units of LMWH, and eighteen received 5.000 U of heparin subcutanously three times a day. Treatment was begun two hours after surgery and continued for seven to ten days. Graft occlusions was diagnosed by duplex ultrasound scans, while deep vein thrombosis was diagnosed by 125-I fibrinogen scans and duplex ultrasound scans.

Results. Early graft thrombotic complications occurred in 3 patients treated with LMWH, and in two patients of those treated with low dose heparin. Venous thrombosis occurred in 1 patient of the group treated with LMWH and in 1 patient of the other group. During the observation period, one nonfatal pulmonary emboli occurred in a patient receiving low-dose heparin. No pulmonary emboli occurred in patients treated with LMWH. Both methods of prophylaxis were tolerated well. The two groups were similar in postoperative blood loss, incidence of wound hematoma, and frequency and volume of postoperative blood transfusion, with a slight advantage for the LMWH group.

Conclusion. Low Molecular Weight heparin is at least as effective and safe as low dose heparin in preventing postoperative graft occlusion and DVT in patients having elective peripheral vascular surgery. The two regimens were equally well tolerated.

VIDEO-ASSISTED BINDING OF PERFORATING INCONTINENT VEINS IN PATIENTS WITH ULCERS OF THE INFERIOR LIMBS.

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Introduction: frequently, venous ulcers of the inferior limbs represented a problem of difficult resolution especially in patients (pts) previously treated with a surgical procedure. Currently, a miniinvasive approach, consisted of a video-assisted subfascial interruption of perforating incontinent veins, has been adopted to clear up the real problem of this particular disease.

Methods: two different operative opticses, one produced by ETB and one by OLYMPUS (ENDOSKOP)® have been utilized. The operating channel allows the use of instruments with a 5 mm of diameter (hooks, scissors, dissectors, etc.). All the pts were subjected to a selective spinal anesthesia of the pathological inferior limb. In our experience, this technique presented a specificity of 100% but a sensibility lower than 80%. For this reason, we preferred to practise a ligature and section on clip of all perforating veins visualized. At the end of the operation, the limb comes carefully bandaged with a strong compression. Than, we exhort the pts to walk as soon as possible (normally 2 hours later). After a median time of 10 days, the elastic bandage has been replaced with an elastic stocking (class II of compression) for further 2 months. In the last two years, 16 pts (12 females and 4 males with a median age of 52 years) have been treated according to the procedure described. All the pts were affected by deep chronic venous insufficiency in stage III (venous ulcers in a different stage of closure).

Results and Conclusions: the median lenght of the endoscopic time has been 28 minutes (range 20-40). 84 perforating veins have been tied and sectioned (56 Cockett's and 28 Boyd's veins) with a range of 4-8 for each pt. We didn't check some immediate and/or late complications. Venous ulcers have been completely scarred after 30 days in 88% of patients and after 90 days in 12%. In conclusion, a significant improvement of chronic venous insufficiency symptoms with complete resolution in all cases has been gained. In spite of the small number of enrolled pts, we can conclude that the adopted technique allowed a better visualization and interruption of perforating incontinent veins in pts affected by venous ulcers of the inferior limbs.

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CAROTID ARTERY PLAQUE: SURGERY OR ENDOVASCULAR PROCEDURES?

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Introduction. Carotid endarterectomy has, in specialized centres, good immediate and late results, with a mortality and morbility rate of < 1%, and restenosis less than 5%. Endovascular procedures are increasing, but it is difficult to determine specific criteria for selection of patients and indications.
Materials and methods. From february to december 1998, 122 patients were treated for carotid artery stenosis or plaque, 107 with endarterectomy and 15 with endovascular procedures. Indications were restenosis > 80% after a previous endarterectomy in six cases, ulcerated plaques in two, stenosis after radiotherapy in one and symptomatic internal carotid artery stenosis of > 70% in six. 12 procedures out of one were performed by means of percoutaneous access to femoral or common carotid artery, three with surgical access to common carotid artery.
Results. Intraoperative angiography demonstrated the succesfull of the procedures in 14 cases (93.3%); in one (6.7%) there was dislocation of the stent with a transient neurologic deficit. One patient (6.7%), with previous miocardial infarction, died seven days after the procedure for a new massive miocardial infarction. There were no complications in the two patients treated for an ulcerated carotid plaque. All the patiens had anticoagulant therapy until they were discharged and then antiplatelets drugs. In 13 patients echodoppler demonstrated, at further investigations, patency of the vessels in 11 cases (84.6%) and restenosis of > 70% in two (15.4%). All the cases were treated with PTA of the vessels stented, with resolution of the stenosis.
Discussion. Unlike endarterectomy, carotid artery angioplasty and stenting may complicate by an high embolization rate, in the order of 6-7 % even in specialized centres (1). Selection of lesions candidates to endovascular procedures is difficult, because there is not method of judging a "dangerous" plaque. Indications for endovascular treatment of carotid artery plaque are, actually, hostile neck, i.e. previous radiotherapy, restenosis or fibromuscolar hyperplasia, but we had good results in treating by means of stent ulcerated plaques in patients with recent ictus and ischemic cerebral lesions. Also restenosis after endovascular procedures can advantage themself, in our experience, of PTA of the stented vessels.
Conclusions. Angioplasty and stenting of the carotid artery can be performed, in future, with a lowest rate of neurological complications, when a better definition of plaque morphology (2) can select the cases where endovascular procedures are more appropriate than surgical endarterectomy.
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Induced thrombosis employng arteriographic guide: a new technique in the treatment of iatrogenic pseudoanerysms.

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Introduction: In recent years the technique of ultrasound-guided external compression has been widely applied in the treatment of iatrogenic pseudoaneurysms. This and the other proposed methods, alternative to surgical treatment, have some limit.
Methods: We induced thrombosis in pseudoaneurysms of 11 patients, having failure or contraindications for ultrasound guided compression, with a new technique.
The pseudoaneurysm was directly punctured by a 16 G. Seldinger needle and a movable core dedicated guide wire was introduced so that the core paked the pseudoaneurysm. The remaining part of the guide was kept outside. After two hours of moderate compression a new echo-doppler was repeated and the core was removed.
Results: All pseudoaneurysms treated were successfully occluded at the end of procedure. There were no procedure related complications and the echodoppler examinations after 24 hours, 30 days and 6 months did not reveal any recurrence of pseudoaneurysm.
Discussion: The echo-guided compression technique is highly effective and safe but has limitations related to presence of anticoagulant therapy, long compression time, patient discomfort, and adverse anatomical conditions. Other methods such covered stent, coil embolisation and thrombin injection, have disavantages related to foreign materials left into the body, stenosis of the artery, scar, and risk of allergic reactions.
Conclusions: This technique appears to be easy, effective, painless and safe because no risk of rupture exists, nothing is left inside or around the artery and no thrombotic drug is injected. For the same reason future procedures throw arterial approach are easy feasible.
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